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A SINGULAR CORDYCEPS FROM STEPHEN ISLAND, NEW ZEALAND.

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At the north-west extremity of Cook Strait, about three miles from D'Urville Island, the nearest land, lies Stephen Island, a small area one and a quarter miles in length and rising to a height of 900 feet above sea level. The island is for the most part open tussock country with, in the more sheltered localities, a few isolated patches of wind-swept forest.

Although only 370 acres in extent Stephen Island rejoices in the possession of a somewhat unique fauna. Here are found the tuatara, *Sphenodon punctatus* Gray, which occurs in thousands and appears to be slowly increasing in number; *Deinacrida rugosa* Buller, a huge *weta*, found in only one other locality; a Discoglossid frog, *Liopelma hamiltoni* McCulloch, a recently discovered species confined to this island, where its habitat appears to be the crevices under large boulders; and a now extinct wren, *Traversia lyallii* Roths.

With the single exception of the *Cordyceps* described below, the flora possesses no peculiar features, as there are no endemic species.

FIG. 1.

FIG. 2.

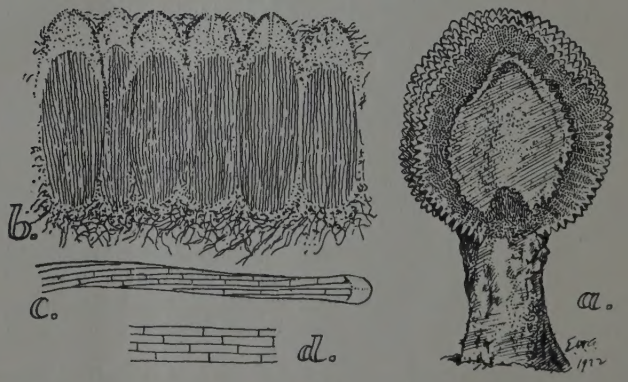

FIG. 3

Fig. 1. Photograph of *Cordyceps Kirkii* sp.nov. showing gregarious stromata. About twice nat. size.

Fig. 2. Imago of *Deinacrida rugosa* Buller, female specimen. Nat. size.

Fig. 3, *a*. Section through fertile portion of stroma, showing arrangement of perithecia. ×6 diam.

b. Section showing superficial perithecia. Note thick apices of perithecia. ×30 diam.

c. Ascus showing capitate apex. *d*. Secondary spores. ×1000.

Photographs by E. Bruce Levy. Drawings by E. H. Atkinson.

The *Cordyceps* specimens referred to were found lying on the ground under stones by Professor H. B. Kirk whilst searching for *Liopelma hamiltoni* McCulloch.

This adds another species to the *Cordyceps* of New Zealand and brings the total up to six, of which no less than five are endemic. The others, together with an account of their hosts, have been discussed by the writer in a former paper published in the Transactions of the N.Z. Institute, LIII, 372 (1921).

I am indebted to Mr W. R. B. Oliver, of the Dominion Museum, Wellington, N.Z., for particulars regarding Stephen Island and its fauna and flora.

Cordyceps Kirkii sp.nov. (Illus.).

Conidial phase accompanying the perithecial, covering surface of host with a dense weft of mycelium, dingy cream, pruinose; conidia hyaline, elliptical, 3–6 × 1–1·5 μ.

Stromata gregarious, growing from intersegmental membranes of the body, and from knee joints, bases of antennae, eyes, and on femurs, stipitate, short, up to 6 mm. long; stem up to 4 mm. long, 1 mm. thick, dingy cream; fertile portion irregularly globose, ovate, or frequently angular, sometimes longitudinally grooved, 1·5–2 × 1·5 mm. diam., pallid brown.

Perithecia superficial, elliptical or elongate-oblong, obtuse, densely packed around a sterile central axis, pallid brown, 700–800 × 150–170 μ, apex thickened up to 120 μ, walls 20–25 μ thick. Asci hyaline, narrowly cylindrical, tapering from apex to base, terminating in a short clavate pedicel, not constricted below capitate apex, 165–210 × 5–6 μ. Spores in spirally twisted fascicles in asci, filiform, same thickness throughout, multiseptate, 80–120 × 1–1·5 μ, secondary spores not readily separable in asci, 6 × 1–1·5 μ.

HOST: Male and female imagines of *Deinacrida rugosa* Buller. Stephen Island, Cook Strait, New Zealand. H. B. Kirk. Jan. 1922.

I have named this species in honour of the collector, Prof. H. B. Kirk, Victoria University College, Wellington, N.Z.

NOTE ON THE HOST. By J. G. Myers.

Deinacrida rugosa Buller*.

This is one of the largest New Zealand species of the interesting Orthopterous family STENOPELMATIDAE, which is well represented in this country by more than thirty species distributed among twelve genera, and all characterised among other peculiarities by the complete absence of wings or elytra.

* Trans. N.Z. Inst. III, 36, 1871.

Under the Maori name of *weta*, and the extremely incorrect titles of "scorpion" or "scorpena," one or other of the commoner species is a familiar object to most people. The species under discussion belongs to an endemic genus. The type is said to have been discovered in an underground burrow at Wanganui; but the species is not now known to me to occur at any locality on the mainland. The two affected specimens, a female with numerous stromata, and a male, were taken under stones by Prof. H. B. Kirk at Stephen Island in Cook Strait where these huge *wetas* are still fairly common and form, in spite of their heavy armature of spines and plates, a portion of the food of the tuatara, *Sphenodon punctatus* Gray. The insect also occurs on Mana Island, and may possibly frequent other islets in Cook Strait.

Cordyceps Kirkii sp.nov.

Statuo conidiale cum statuo peritheciale, superficiem hospitis storea densa mycelii contegente, ravo-pallido-flavo, pruinoso; conidiis hyalinis, ellipticis, 3–6 × 1–1·5 μ.

Stromatibus congregatis, ex membranis intersegmentalibus corporis, et ex genibus, basibus antennarum et oculorum et in femoribus crescentibus; stipitatis, brevibus, ad 6 mm. longis. Stipite ad 4 mm. longo, 1 mm. crasso, ravo-pallido-flavo. Parte fertile inaequaliter globosa, ovata vel saepe angulifera, aliquando in longitudinem striata, 1·5–2 × 1·5 mm. crassa, pallido-brunnea.

Peritheciis externis, ellipticis vel elongato-oblongis, obtusis, dense confertis, pallido-brunneis, 700–800 × 150–170 μ; apice crasso ad 120 μ, muris crassis 20–25 μ. Ascis hyalinis, angusto-cylindraceis, pedicello breve clavato terminatis, infra apicem capitatam non constricto, 165–210 × 5–6 μ. Sporidiis in fasciculis tortuosis in ascibus, filiformibus, cylindraceis, multiseptatis, 80–120 × 1–1·5 μ; sporidiis secundariis non distinguendis in ascibus, 6 × 1–1·5 μ.

Hab.: in imaginibus *Deinacridae rugosae* Buller (Orthoptera). Stephen Island, Cook Strait, Nov. Zeal. H. B. Kirk. Jan. 1922.